



50⁺ Years
Of experience

MINERAL SLAG ROTARY DRUM DRYER



ISO 9001:2015 | ISO 14001:2015 | ISO 45001:2018

ABOUT US

Kerone Engineering Solutions Ltd is a global leader in advanced industrial heating, drying, cooling & end to end process engineering solutions. With over five decades of proven expertise, we specialize in designing, manufacturing, and delivering highly customized, cutting-edge systems tailored to the evolving needs of industries worldwide.

Our commitment to engineering excellence, sustainability, digitalization, and technological innovation has positioned us as a trusted partner for businesses across multiple sectors. By integrating Artificial Intelligence (AI), Machine Learning (ML), and Internet of Things (IoT) technologies into our systems, Kerone ensures smarter automation, real-time monitoring, predictive maintenance, and data-driven process optimization—empowering our clients to achieve greater productivity, efficiency, and reliability.



50+

Years of Experience



10,000+

Satisfied Clients



500+

Employee



100+

Experts



50+

Global Presence



50+ Years Manufacturing Excellence



Great Sale Support



Highly Customized Product



Adherence to Standards



Sound Infrastructure



Team of experts Delivering Quality



Timely Delivery



Cost Effective Solutions



INDUSTRIES WE SERVE

- ✓ Food Processing & Agro-Processing
- ✓ Chemicals & Petrochemicals
- ✓ Pharmaceuticals
- ✓ Textiles, Automotive & Aerospace
- ✓ Paper & Packaging
- ✓ Ceramics & Glass
- ✓ Rubber & Plastics
- ✓ Environmental & Waste Management
- ✓ Oil, Gas & Steel Industries



- ✓ Industry Expertise – Over 50 years of global engineering leadership.
- ✓ Custom Solutions – Tailored engineering that meets unique industrial requirements.
- ✓ Global Reach – Trusted by industries across continents with proven reliability.
- ✓ Digital & Smart Systems – AI/ML-powered automation, IoT-based monitoring, and predictive insights.
- ✓ Cutting-Edge Technology – Continuous innovation in heating, drying, and advanced processing.
- ✓ Energy Efficiency – AI-optimized designs for lower energy consumption and sustainability.

QUALITY & COMPLIANCE

At Kerone, quality and compliance are non-negotiable. All our solutions are engineered in adherence to international standards and industry best practices, ensuring maximum safety, durability, reliability, and efficiency. With integrated digital technologies, we enable smarter quality control and compliance tracking across all operations.





Mineral Slag Rotary Drum Dryer

The Mineral Slag Rotary Drum Dryer is a specialized industrial drying machine designed to reduce the moisture content of slag – a byproduct generated during smelting or ore extraction – making it easier to handle, process, or reuse. The machine consists of a rotating cylinder tilted slightly to the horizontal line, where material is fed from the higher end while the heat-carrying body enters from the lower end, making contact with the material in a countercurrent manner. As the cylinder rotates, gravity moves the material toward the lower discharge end, where the wet material is directly or indirectly exposed to the heat carrier and progressively dried.

The drum features an innovative lifting plate device that performs multiple functions – guidance, uniform flow, and material lifting – ensuring comprehensive and even distribution of materials across the radial cross-section of the drying drum, forming a thin and uniform curtain of materials that allows full contact with the hot airflow, thereby achieving optimal utilization of thermal energy. The complete system encompasses the rotary barrel, induced fan system, dispersing system, lifting blade, self-cleaning system, transmission system, conveying system, reducer, supporting system, and sealing system – all scientifically designed to deliver high production efficiency and strong energy-saving performance.

Key Features

- **Flexible Fuel Compatibility**
These rotary drum dryers can be powered by a wide range of fuels including natural gas, coal, anthracite, biogas, diesel, methane, and biomass – giving operators full flexibility based on availability and cost.

- **Innovative Lifting Plate Design**

The multi-lifting plate design inside the rotary drum distributes materials evenly, ensuring consistent heat transfer and eliminating material adhesion on the inner cylinder wall – improving drying efficiency and reducing operational risks.

- **Multi-Zone Drying System**

The drum operates through distinct working zones – a loading zone where wet slag contacts high-temperature hot air, a lifting and cleaning zone where material forms a curtain-like state for maximum heat exchange, and a discharging zone where dried slag exits smoothly.

- **Wide Temperature Range**

With flexibility to adjust both drying temperatures and times, the dryers handle a wide range of materials – from high-temperature mineral sand drying (up to 800°C) to low-temperature applications like gypsum drying (below 300°C).

Advantages

- **Reduced Energy Consumption**

Coal and electricity consumption is reduced by over 10–15% compared to conventional drying equipment, while hourly output is increased by over 10–15%.

- **Large Processing Capacity**

Strong anti-overload capability with low fuel consumption, significantly reducing overall drying costs.

- **Versatile Material Handling**

Beyond slag, the dryer also processes acetylene sludge, limestone, clay, river sand, quartz sand, and more.

- **Co-current Drying Design**

Material and heat flow enter from the same side, resulting in a low dryer outlet temperature and high thermal efficiency

Applications

Industry	Description
Cement Industry	Drying blast furnace slag and fly ash used as supplementary cementitious materials in cement production
Metallurgy & Smelting	Processing alkaline and acid slags from iron, steel, and copper smelting operations for recycling and reuse
Construction Materials	Producing slag cement, slag bricks, blocks, slag concrete, thermal insulation materials such as slag wool, and glass
Chemical Industry	Drying industrial by-products, desulfurization gypsum, and chemical raw materials for further processing
Fertilizer Production	Processing mineral-based and organic fertilizer components requiring moisture reduction before granulation
Coal Processing	Drying coal sludge, lignite, cinder, and flotation coal for improved combustion value and handling
Sand & Aggregate	Drying quartz sand, river sand, and limestone for use in construction and manufacturing



Technical Specifications

Parameter	Specification Range	Description
Drum Diameter	Φ1.0 m – Φ4.0 m	Determines processing capacity; larger diameter handles higher throughput
Drum Length	8 m – 45 m	Longer drums allow extended drying time and handle higher moisture materials
Processing Capacity	300 – 3,000 t/day	Tailored to specific material and moisture depth requirements
Inlet Moisture Content	10% – 40%	Typical moisture range of wet slag entering the dryer
Outlet Moisture Content	≤ 1% – 5%	Target residual moisture after drying, depending on application
Thermal Efficiency	Up to 80%	Achieved through high-temperature flue gas systems
Drum Inclination	1° – 5°	Slight horizontal tilt facilitates gravity-driven material flow through the drum
Heat Source Options	Coal, Natural Gas, Diesel, Biomass, Biogas	Multiple fuel types supported for operational flexibility



THANK YOU

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